



## Consumption Inequality in Urban China: 1988--2009

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### Abstract

The fluctuation of consumption inequality has been described by using survey data of China urban residents. Researchers have found that since Chinese economic reform, the inequality of urban consumption has become more serious, and it has been worse than the inequality of income. Since 1994, consumption inequality has become worse. After 2002, the up-going worse condition of the unequal consumption became more significant, and since then the Gini Coefficient has been stable, which means it merely has too much change. Although since 1988 the consumption inequality has become worse, the benefit that consumption brought along has kept going up year by year.

**Key words:** Consumption inequality; Income inequality; Social welfare

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### INTRODUCTION

Since the reform and opening-up policy in 1978, contemporary China has been going through the transition of market economy. In this process, Chinese economy develops rapidly. The average annual growth is no less than 9%, per capita GDP grow from 381 RMB in 1978 to 25575 in 2009. At the same time, the social inequality

has become worse, and in different stage of reform it has different features (Li & Zhao, 2011). Therefore, due to this complex condition, the researches and general theory of social inequality has been playing a very important role in the researches of social changes after reform and opening-up.

For a long time researches mainly concentrate on income distribution. A lot of researches show that before reform and opening-up, the degree of income equality are still high, however, since 1978, the nationwide income differs more and more. The income inequality between rural and urban area, different regions, different walks of life, and different social classes has become more and more serious (Li, 2010; Wu, 2011). In recently years, a lot of scholars start to have more suspicion and criticism on the way of the inequality degree assessment, which is based on the income data. The main reason of the assessment is that in this society everyone's welfare is as important as the rest, however, income, especially the current income index that is used in many researches cannot really reflect social members' welfare situation. In a certain period, comparing to consumption, income has greater fluctuation. So in the long term the current income cannot accurately reflect the available resource, while comparing to income, outgoing can measure residential welfare and income more accurately and directly. Besides, the measurement of income in China always comes across problems, such as recessive welfare, grey income, so compared to income, outgoing will reduce the rat that some income is not counted in (Paim, 1995; Meyer & Sullivan, 2003; Cai & Chen, 2010 ).

Furthermore, according to Szelenyi's (1978) view, the inequality of socialist countries doesn't reflect on wage, but housing provident fund, welfare, allowance and other non-wage income. Therefore, using the consumption difference to do research on the changes of the inequality in China since market economy would be a more reasonable way.

In fact, there are a lot of scholars abroad already starting to study inequality from current consumption. Cutler and Katz's (1992) research on America shows that by using income or consumption to do research on the fluctuation of inequality, the result is the same. However, Brzozowski and Gervais (2010) found that the consumption inequality degree is lower than income inequality degree, and the fluctuation is comparative smooth. Although domestically a lot of scholars pointed out that consumption is more suitable than income to be used in inequality analysis because collecting household consumption micro data is very hard, and previous researches on consumption inequality was not sufficient. Therefore, this thesis is the result of research that studies the varying trends of consumption inequality in the process of economy marketization by mainly using the survey data of China urban residents. This thesis shows the current unequal social condition from a different angle.

All the data adopted in this thesis are from the sample of S city in China Urban Residents Survey which was organized by National Bureau of Statistics, including the original data of 1988–2009. The stratified, multistage, proportions (PPS), random offset methods were adopted in sample selection in this thesis, and the effective samples are 6203 households in total. The survey content

includes family members, basic household conditions, income, consumption outgoing and so on. In the middle of these, individual basic conditions, income, social insurance outgoing were collected in unit of individual, and consumption data were collected in unit of household.

## 1. THE OVERALL TREND OF THE CONSUMPTION INEQUALITY VARYING

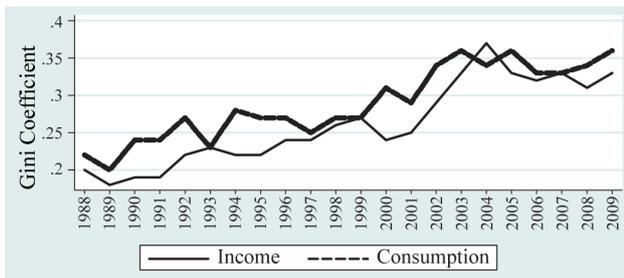
In order to check if consumption inequality and income inequality are different, we calculated Gini coefficient. In Table 1, it's obvious that the urban household income per capita and the degree of consumption inequality from 1988 to 2009 keeps going up. Comparing to 1988, the Gini coefficient of income and consumption in 2009 grow 65% and 63.6% respectively. The consumption Gini coefficient is about 10% higher than income Gini coefficient in all years except for 2004. What this table shows is accordant with the research result of Cai (2010). Cai (2010) holds that the reason why the research result of China is not accordant with that of other countries are recessive welfare, grey income are not counted in the total income, so consumption can show the inequality more accurately than income.

**Table 1**  
**The Changing of the Degree of Consumption Outgoing Inequality 1988-2009: The Overall Index**

Year	Income Gini coefficient	Gini coefficient	Variation	P10/p50	P90/p50	A <sub>0.5</sub>	A <sub>1</sub>	A <sub>2</sub>
1988	0.20	0.22	0.41	0.64	1.64	0.04	0.07	0.13
1989	0.18	0.20	0.37	0.66	1.68	0.03	0.06	0.12
1990	0.19	0.24	0.48	0.60	1.81	0.05	0.09	0.16
1991	0.19	0.24	0.49	0.60	1.92	0.05	0.09	0.16
1992	0.22	0.27	0.52	0.59	2.00	0.06	0.11	0.19
1993	0.23	0.23	0.51	0.63	1.56	0.05	0.08	0.15
1994	0.22	0.28	0.57	0.59	1.96	0.06	0.12	0.22
1995	0.22	0.27	0.55	0.57	1.79	0.06	0.11	0.20
1996	0.24	0.27	0.57	0.53	1.72	0.06	0.11	0.20
1997	0.24	0.25	0.47	0.59	1.89	0.05	0.09	0.17
1998	0.26	0.27	0.57	0.60	1.96	0.06	0.11	0.20
1999	0.27	0.27	0.54	0.59	1.90	0.06	0.11	0.19
2000	0.24	0.31	0.84	0.62	1.89	0.09	0.16	0.25
2001	0.25	0.29	0.62	0.56	1.94	0.07	0.13	0.22
2002	0.29	0.34	0.76	0.45	1.97	0.10	0.18	0.29
2003	0.33	0.36	0.82	0.53	2.24	0.11	0.19	0.33
2004	0.37	0.34	0.72	0.46	2.08	0.09	0.17	0.31
2005	0.33	0.36	0.93	0.50	2.16	0.11	0.19	0.32
2006	0.32	0.33	0.81	0.51	2.09	0.09	0.17	0.28
2007	0.33	0.33	0.72	0.52	2.10	0.09	0.16	0.28
2008	0.31	0.34	0.71	0.49	2.20	0.09	0.17	0.29
2009	0.33	0.36	0.86	0.50	2.30	0.11	0.20	0.33
Δ=2009-1988	0.13	0.14	0.45	-0.14	0.66	0.07	0.13	0.20
Varying percentage	65.0	63.6	109.8	-21.9	40.2	175.0	185.7	153.8

Note: P is quantile function; A is Atkinson family of inequality indices; Δ is difference; The second column is income Gini coefficient; the other columns are consumption inequality index.

The other indexes of measuring consumption inequality and Gini coefficient vary consistently. From 1988 to 2009, the varying index doubled, which shows that the center of consumption distribution and right skewed magnify, and the lower classes consumption takes smaller proportion than the upper classes. Quantile can better explain the varying consumption inequality. For example, p10/p50 (the ration of 10th percentile and median) describes the main part of the lower half part, and p90/p50 describes the main part of the upper half part. The descending of p10/p50 along with the ascending of p90/p50 reflects that in the 22 years, 1988-2009, the urban household consumption inequality became worse. Atkinson family of inequality indices provides a hateful angle. As hate become stronger, the level of consumption inequality goes up and the varying becomes greater, but the varying of per centum is not like this.

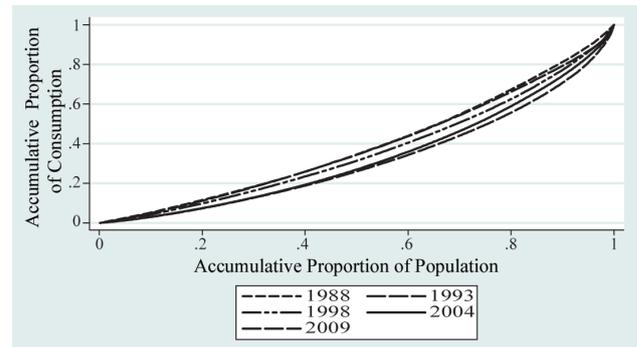


**Figure 1**  
**The Gini Coefficient of Consumption and Income**

In Figure 1, the varying trend of consumption inequality is manifested clearly. Since 1994, the degree of consumption inequality has small increase. The Gini coefficient of 1994 is 27% higher than that of 1988, which takes 43% of the whole increase of the 22 years. Since 2002, the consumption Gini coefficient has been above 0.3, and comparing to 1994, the increase is above 28%. However, after 2003, the Gini coefficient has kept stable, which is basically no changes. Moreover, in the process of marketization, the degree of consumption inequality is basically higher than that of income inequality. In the Lorenz curve, most part of the curves of 1993 and that of 1988 overlaps, which means that the difference of the inequality is small, and the difference of consumption distribution mainly on the highest consumption level of the 20% households. The space between 2004 and 1998 is the largest, which means that the consumption inequality between 1998 and 2004 varies most Lorenz Curve.

The consumption inequality ascends a lot within 22 years. In the following steps, we will use asymptotic approach to check the consumption inequality, so that we can put our result to population. The significance test of the consumption inequality of 1988 vs. 2009 shows except for the coefficient of variation is at the 0.01 level of probability, the difference of other indexes has significance on level 0.001. This fully illustrates that in 1988-2009, urban household consumption inequality

varied a lot. By only using Gini coefficient to test to the inequality varying in different year, we found that the Gini coefficient of 1988-1993 was no significant difference, neither do that of 1994-2001 and 2002-2009. The Gini coefficient of the year before 1994 and the year 1994-2001 has significant difference. So do that of the year before 2002, and 2002-2009.



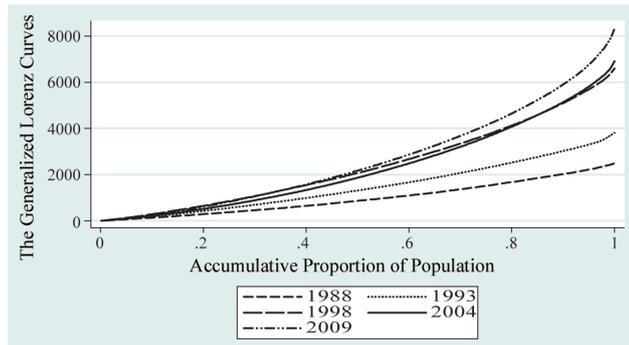
**Figure 2**  
**Lorenz Curves of Consumption**

Therefore, the consumption inequality in these 22 years has been obvious periodical. It can be divided into 3 periods. The first period (1988-1993): the urban household consumption is comparatively equal, and the Gini coefficients of this period are mostly under 0.24; in these 5 years, the fluctuation is small. The second period (1994-2001): the inequality variation stands out; for most years, the Gini coefficients are above 0.27. The third period (2002-2009): the inequality variation is great; the Gini coefficients are all above 0.33, but keep comparatively stable, and have small fluctuation.

## 2. THE CONSUMPTION INEQUALITY AND THE WELFARE CHANGES

With the fast growth of Chinese economy, income and consumption inequality keep going up. Does this mean that for some people, their conditions are getting worse? According to Pareto Optimality, for a group of people and all the available resource to be allocated, if the allocation changes from one state to another, any individual get richer but no one get poorer. This means the social welfare increases. Therefore, we drafted the generalized Lorenz curves of year 1988, 1993, 1998, 2004, and 2009. The degree of social welfare was sorted according to the place of a function in the coordinate. And then the generalized Lorenz curves were finalized by multiplying Lorenz Curve with the average consumption (Hao & Naiman, 2010). If the consumption allocation curve, A locates upper on the consumption allocation curve B, it is considered that consumption allocation A is more fair than that of B. From figure 3, we can see that the social welfare of urban residents' consumption keeps going up year by year, and in most years the social welfare has achieved Pareto improvement. The only exception is the

social welfare of 2004 is lower than that of 1998. This is because part of the samples of 2004 adopted is foreign population. If the immigrant population is not counted in the samples, the social welfare of all years would be improved. This illustrates that the social welfare of the foreign population in 2004 is lower than the social welfare of local population in 1998. Overall, although since 1988, the consumption inequality has great growth, the welfare that was brought along by consumption keeps going up. The reason that social welfare was improved is the actual growth of consumption can make up for the extension of consumption inequality.



**Figure 3**  
The Generalized Lorenz curves of Consumption Per Capital

## CONCLUSION

Since Chinese economic reform, the inequality of urban consumption has become more serious, and it has been worse than the inequality of income. Since 1994, consumption inequality has become worse. After 2002, the up-going worse condition of the unequal consumption became more significant, and since then the Gini Coefficient has been stable, which means it merely has too much change. Therefore, the consumption inequality in these 22 years has been obvious periodical. It can be divided into 3 periods. The first period (1988-1993): the urban household consumption is comparatively equal, and the Gini coefficients of this period are mostly under 0.24; in these 5 years, the fluctuation is small. The second

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